

XRAM Acc No: C97-035559

XRPX Acc No: N97-091992

Pattern formation method for semiconductor substrates - uses a silicon cpd. surface pre-treatment preventing the formation of an insoluble skin on the surface of the resist pattern

Patent Assignee: MATSUSHITA ELECTRIC IND CO LTD (MATU); SHINETSU CHEM CO LTD (SHIE); MATSUSHITA DENKI SANGYO KK (MATU); SHINETSU CHEM IND CO LTD (SHIE); SHINETSU KAGAKU KOGYO KK (SHIE)

Inventor: ENDO M; KATSUYAMA A; NAKAOKA S; OHSAKI H

Number of Countries: 008 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 757290	A2	19970205	EP 96112569	A	19960802	199711 B
JP 9102458	A	19970415	JP 96180602	A	19960710	199725
KR 97012021	A	19970329	KR 9631804	A	19960731	199815
US 6054255	A	20000425	US 96691124	A	19960801	200027 N
			US 97888129	A	19970703	
TW 386180	A	20000401	TW 96108702	A	19960717	200057

Priority Applications (No Type Date): JP 95198296 A 19950803; US 97888129 A 19970703

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
-----------	------	-----	----	----------	--------------

EP 757290	A2	E	43	G03F-007/075	
-----------	----	---	----	--------------	--

Designated States (Regional): DE FR GB IT

JP 9102458	A	26	H01L-021/027	
------------	---	----	--------------	--

KR 97012021	A		G03F-007/26	
-------------	---	--	-------------	--

US 6054255	A		G03F-007/00	Div ex application US 96691124
------------	---	--	-------------	--------------------------------

TW 386180	A		G03F-007/00	
-----------	---	--	-------------	--

Designated States (Regional): DE; FR; GB; IT

Abstract (Basic): EP 757290 A

A pattern forming method consists of: (i) treating the surface of a semiconductor substrate with a surface treating agent containing a silane cpd. represented by formula (1):

$R_1R_4-nSi(OR)_n$ (1)

$n = 1 - 3$; $R =$ opt. substd. 1-6C (un)satd. hydrocarbon or opt. substd. 1-6C alkylcarbonyl gp.; $R_1 = H$, opt. substd. 1-6C (un)satd. hydrocarbon or alicyclic satd. 3-6C hydrocarbon gp.; (ii) coating the treated surface with a chemically amplified resist to form a resist film; and (iii) exposing the resist film to light via a mask with a desired pattern configuration, and developing the resist film to give a resist pattern.

Also claimed are: (a) identical pattern forming methods which use silane cpds. of formula (2), (3), (4), (5) or (6):

$R_2R_{13}-nSi(OR)_n$ (2)

$R_2R_{13}-nSi(NR_{32})_n$ (3)

$(R_2R_{12}Si)_2NR_3$ (4)

$R_1R_4-nSi(OR_4)_n$ (6)

$R_2 =$ opt. substd. 3-6C (un)satd. hydrocarbon or alicyclic satd. 3-6C hydrocarbon gp.; $R_3 = H$ or unsubstd. satd. 1-3C hydrocarbon gp.; $R_4 =$ substd. satd. 1-6C hydrocarbon gp., opt. substd. unsatd. 1-6C hydrocarbon gp. or opt. substd. 1-6C alkylcarbonyl gp.; $m = 2 - 6$; and

(b) a surface treating agent for treating the surface of a semiconductor substrate containing a silane cpd. of formula (7):

$R_1R_4-nSi(OR)_n$ (7).

USE - For pattern formation, partic. on substrates used in the mfr. of semiconductor devices.

ADVANTAGE - Prevents formation of an insoluble skin layer on the surface of the resist pattern, and formation of a footing at the base of the resist pattern. Improves the adhesion of the resist to the semiconductor substrate.

Dwg. 0/16

(c) 2001 Derwent Info Ltd. All rights reserved.

003844638

WPI Acc No: 1983-840889/198350

Increasing adhesion of resist layer to semiconductor substrate - by
treating substrate with organo silicon amide. NoAbstract Dwg 0/1
Patent Assignee: NIPPON TELEGRAPH & TELEPHONE CORP (NITE); TOYO SODA MFG
CO LTD (TOYJ)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 58188132	A	19831102				198350 B

Priority Applications (No Type Date): JP 8270485 A 19820428

Patent Details:

Patent No	Kind	Lang	Pg	Main IPC	Filing Notes
JP 58188132	A		19		

?